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APPLICATION FOR UNITED STATES LETTERS PATENT

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TITLE: METHOD AND SYSTEM FOR
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                ON A MOBILE PHONE

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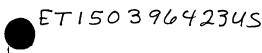   INTELLECTUAL PROPERTY LAW DEPT.
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METHOD AND SYSTEM FOR
REQUEST BASED ADVERTISING ON A MOBILE PHONE

BACKGROUND OF THE INVENTION

5   1.   Field Of The Invention

The present invention generally relates to the advertising of goods and services. The present invention specifically relates to advertisements being communicated to mobile phone users.

10   2.   Description Of The Related Art

The mobile phone industry experienced tremendous growth during the 1990's. This growth facilitated an expansion in features available on a mobile phone. For example, mobile phones are now being sold with an Internet browser feature, an e-mail feature, and a Personal Data Assistant feature. It 15 is inevitable that advertisers will "push" advertisements to mobile phone users, and as a result, mobile phones will need to be equipped with an advertising messaging feature. Any type of advertising messaging feature should balance an economic benefit for advertisers with a shopping advantage for mobile phone users. Additionally, a convenient communication 20 mode with the mobile phone users must be established, while any risk of economically burdening mobile phone users should be minimized, if not eliminated. What is therefore needed is a system for implementing a method that intelligently communicates advertisements of goods and services to mobile phone users in a manner that is acceptable to both mobile phone 25 users and advertisers. In particular, what is needed is a communication mode whereby the mobile phone user can "pull" advertisements for goods and services of user interest, which are available from advertisers located nearby, as opposed to having advertisements pushed to the mobile phone.

SUMMARY OF THE INVENTION

~~The present invention is a method and a system for advertising on~~ mobile phones that enables a mobile station user to request advertisements including one or more keywords supplied the user and optionally based on

5   user location and preferences. Various aspects of the invention are novel, non-obvious, and provide various advantages. While the actual nature of the present invention covered herein can only be determined with reference to the claims appended hereto, certain features, which are characteristic of the ~~embodiments disclosed herein, are described briefly as follows.~~

10   One form of the present invention is a method for communicating advertisements to a mobile station (e.g., a mobile phone). One or more keywords are received from the mobile station. An advertiser profile matching the keywords is identified. An advertisement corresponding to the advertiser profile is transmitted to the mobile station.

15   A second form of the present invention is a system comprising a mobile station and a computer (e.g., a computer telephony server). The mobile station is operable to transmit one or more keywords to the computer. The computer includes means for identifying an advertiser profile matching the keywords, and means for controlling a transmission of an advertisement

20   corresponding to the advertiser profile to the mobile station.

     A third form of the present invention is a computer program product in a computer readable medium for communicating advertisements to a mobile station. The computer program product comprises computer readable code for receiving one or more keywords from the mobile station, computer

25   readable code for identifying an advertiser profile matching the keywords, and computer readable code for controlling a transmission of an advertisement corresponding to the advertiser profile to the mobile station.

The foregoing forms and other features and advantages of the
invention will become further apparent from the following detailed description
of the presently preferred embodiments, read in conjunction with the
accompanying drawings. The detailed description and drawings are merely

5   illustrative of the invention rather than limiting, the scope of the invention
being defined by the appended claims and equivalents thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic diagram of one embodiment of hardware

10   employed in a telecommunication system of the present invention;

FIG. 2 is a block diagram of one embodiment in accordance with the
present invention of computer hardware employed in a primary call center of
the FIG. 1 system;

FIG. 3 is a block diagram of one embodiment in accordance with the

15   present invention of hardware employed in a mobile phone of the FIG. 1
system;

FIG. 4 illustrates a flow chart of one embodiment in accordance with
the present invention of a user profiling routine;

FIG. 5 is a block diagram of one embodiment in accordance with the

20   present invention of computer software employed in the FIGS. 2 and 3
hardware;

FIG. 6 illustrates flow charts of one embodiment in accordance with the
present invention of a pair of complementary push advertising routines that
are implemented by the FIG. 5 computer software;

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FIG. **7** illustrates a flow chart of one embodiment in accordance with the present invention of an advertisement transmission subroutine of the **FIG. 6** routines; and

FIG. **8** illustrates a flow chart of one embodiment in accordance with

5   the present invention of a reception verification subroutine of the **FIG. 6** routines.

DETAILED DESCRIPTION OF THE
PRESENTLY PREFERRED EMBODIMENTS

10   Referring to **FIG. 1**, a telecommunication system of the present invention is shown. The system comprises a conventional public switched telephone network (PSTN) **10**, a primary call center **20**, a mobile station in the form of a mobile phone **50**, a base station **60**, and an advertiser call center **70**. The system can comprise additional primary call centers **20**, mobile

15   phones **50**, base stations **60**, and/or advertiser call centers **70**.

Call center **20** includes a computer telephony (CT) server **30**, a registration database **40**, a user profile/history database **41**, and an advertiser database **42**. CT server **30** may have a permanent communication link to PSTN **10** as shown, such as, for example, by a wire or fiber optic cable

20   connection. Alternatively, PSTN **10** and CT server **30** may have a temporary communication link, such as, for example, by a wireless communication. CT server **30** has a permanent communication link to databases **40-42** as shown.

CT server **30** may be configured in any form for accepting structured inputs, processing the inputs in accordance with prescribed rules, and

25   outputting the processing results as would occur to those having ordinary skill in the art, such as, for example, a personal computer, a workstation, a super computer, a mainframe computer, a minicomputer, a super minicomputer, or a microcomputer. Referring additionally to **FIG. 2**, CT server **30** preferably

includes a bus **31** for facilitating electrical communication among one or more central processing units (CPU) **32**, a read-only memory (ROM) **33**, a random access memory (RAM) **34**, an input/output (I/O) controller **35**, a disk controller **36**, a communication controller **37**, and a user interface controller **38**.

5   Each CPU **32** is preferably one of the Intel families of microprocessors, one of the AMD families of microprocessors, one of the Motorola families of microprocessors, or one of the various versions of a Reduced Instruction Set Computer microprocessor such as the PowerPC chip manufactured by IBM. ROM **33** permanently stores various controlling programs such as the Basic

10   Input-Output System (BIOS) developed by IBM. RAM **34** is the memory for loading an operating system and selectively loading the controlling programs.

           Controller **35** is an aggregate of conventional controllers for facilitating an interaction between CPU **32** and pointing devices such as a mouse **43** and a keyboard **44**, and between CPU **32** and output devices such as a printer **45**

15   and a fax **46**. Controller **36** is an aggregate of conventional controllers for facilitating an interaction between CPU **32** and data storage devices such as disks drives **47** in the form of a hard drive, a floppy drive, and a compact-disc drive that are locally or remotely situated. The hard drive stores a conventional operating system, such as, for example, IBM's AIX operating

20   system or Microsoft's Windows, and application programs.

           Controller **37** is an aggregate of conventional controllers for facilitating an interaction between CPU **32** and PSTN **10** as well as between CPU **32** and registration database **40**, CPU **32** and user profile/history database **41**, and CPU **32** and advertiser database **42**. Controller **38** is an aggregate of

25   conventional controllers for facilitating an interaction between CPU **32** and a graphic display device such as a monitor **48**, and between CPU **32** and an audio device such as a speaker **49**.

Those having ordinary skill in the art will appreciate alternative embodiments of CT server **30** for implementing the principles of the present invention.

Referring still to **FIG. 1**, mobile phone **50** may be configured in any

5   form as those having ordinary skill in the art will appreciate. Referring additionally to **FIG. 3**, mobile phone **50** preferably includes a bus **51** for facilitating electrical communication among a central processing unit (CPU) **52**, a flash memory (FLASH) **53**, a random access memory (RAM) **54**, a read-only memory (ROM) **55**, a display adapter **56**, a keypad adapter **57**, an

10 audio adapter **58**, and a wireless link **59** including a transmitter (not shown), a receiver (not shown), and an antenna (not shown).

As with each CPU **32** (**FIG. 2**), CPU **52** is preferably one of the Intel families of microprocessors, one of the AMD families of microprocessors, one of the Motorola families of microprocessors, or one of the various versions of

15 a Reduced Instruction Set Computer microprocessor such as the PowerPC chip manufactured by IBM. FLASH **53** stores a conventional operating system, such as Windows CE or Palm OS, and application programs. FLASH **53** or ROM **55** stores various controlling programs such as the Basic Input-Output System (BIOS). RAM **54** is the memory for loading the

20 operating system and selectively loading the controlling programs.

Those having ordinary skill in the art will appreciate alternative embodiments of mobile phone **50** for implementing the principles of the present invention. Those having ordinary skill in the art will also appreciate alternative embodiments of a mobile station for implementing the principles of

25 the present invention, such as, for example, a laptop computer, a Personal Data Assistant, etc.

Referring again to FIG. 1, base station 60 may be configured in any form of a conventional system for establishing and registering a communication link with mobile phone 50 when detecting mobile phone 50 is activated (i.e., mobile phone 50 is powered on) within a distinct service area.

5　　PSTN 10 and base station 60 may have a permanent communication link, or alternatively, PSTN 10 and base station 60 may have a temporary communication link as shown.

Referring still to FIG. 1, call center 70 includes a conventional telecommunication switch (TS) 71, a computer telephony server (not shown) and one or more telecommunication devices, such as, for example, a

10　　switchboard, a phone, or an agent workstation 72 as shown. PSTN 10 and switch 71 may have a permanent communication link as shown, or alternatively, PSTN 10 and switch 71 may have a temporary communication link. Switch 71 has a permanently established communication link to agent

15　　workstation 72 as shown.

User profile database 41 includes one or more exemplary rows of data representative of information related to users of mobile stations within the telecommunication system that have been granted authorization from call center 20 to "pull" advertisements to their respective mobile station. In one

20　　embodiment, call center 20 utilizes a user profiling routine 100 as shown in FIG. 4 to generate and store a user profile within database 41 for the user of mobile phone 50. Accordingly, to gather user information, call center 20 can offer personal interviews (e.g., face-to-face or telephonically), or accept applications via walk-ins, the mail system, a telephone or an Internet website.

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Referring additionally to **FIG. 4**, during a stage **S102** of routine **100**, information related to mobile phone **50** as well as any secondary mobile phones for receiving advertisements is stored within database **41**. The following TABLE 1 illustrates an exemplary row of stage **S102** information coded and stored within user profile database **41** that corresponds to the user of mobile phone **50**:

TABLE 1

PRIMARY MOBILE PHONE	PULL ADS	SECONDARY MOBILE PHONE	PULL ADS
50	Yes	Spouse's Mobile Phone	Yes

During a stage **S104** of routine **100**, information related to the types of advertisements preferred by the user of mobile phone **50** is stored within database **41**. The following TABLE 2 illustrates an exemplary row of stage **S104** information coded and stored within user profile database **41** that corresponds to the user of mobile phone **50**:

TABLE 2

PRIMARY INTEREST	SECONDARY INTERST
Sports Clothing And Memorabilia	Automobiles And Accessories

During a stage **S106** of routine **100**, information related to a facilitation of purchases by the user of mobile phone **50** is stored within database **41**. The following TABLE 3 illustrates an exemplary row of stage **S106** information coded and stored within user profile database **41** that corresponds to the user of mobile phone **50**:

TABLE 3

PIN NO.	CREDIT CARD	SHIPPING ADDRESS
xxxxxxxxx	MasterCard xxxx-xxxx-xxxx-xxxx; Expiration Month/Year	Street; City, State; Zip Code

Routine **100** is terminated upon completion of stage **S106**. The user of
mobile phone **50** however can direct an editing of any information stored

5   within database **41**. For example, the user of mobile phone **50** may desire to
change the advertisement transmission schedule for mobile phone **50**. The
user of mobile phone **50** can provide a schedule change to authorized
personnel of call center **20**, can input a schedule change to database **41** by
utilizing telephone dial keys of mobile phone **50** or providing vocal commands

10   via mobile phone **50** to CT server **30**, or can input a schedule change to
database **41** via an Internet website established by call center **20**.

Referring to **FIG. 1**, advertiser database **42** includes rows of data
representative of information related to a demographic of advertisers as well
as the goods and/or services sold by advertisers. For purposes of matching

15   locations of mobile phone users and advertisers, the base station serving the
area in which the advertiser is located is also listed in advertiser database **42**.
The following TABLE 4 illustrates an exemplary row of an advertiser
information within advertiser database **42** with information related to the
advertiser of call center **70**:

20

TABLE 4

ADVERTISER	PHONE NO.	LOCATION	GOODS/ SERVICES	BASE STATION
70	(xxx) xxx-xxx	Street; City, State; Zip Code	Sports Clothing	60

Referring to **FIGS. 2** and **5**, CT server **30** includes software **80** as will be subsequently described herein in connection with **FIG. 6**. Software **80** is physically stored within the hard drive of disk drives **47** and uploaded to RAM **34** whereby the hard drive and RAM **34** are computer readable mediums that are electrically, magnetically, optically, or chemically altered to carry computer readable code for implementing software **80**. In other embodiments of CT server **30,** software **80** can be stored and downloaded from other computer readable mediums such as, for example, from another disk drive **47**. Also in other embodiments of CT server **30**, software **80** can be partially or fully implemented with digital circuitry, analog circuitry, or both. CT server **30** can additionally include software (not shown) as would occur to those having ordinary skill in the art for establishing an Internet web site.

Referring to **FIGS. 3** and **5**, mobile phone **50** includes software **90** as will be subsequently described herein in connection with **FIG. 6**. Software **90** is physically stored within FLASH **53** or ROM **55** and uploaded to RAM **54** whereby FLASH **53**, RAM **54**, and ROM **55** are computer readable mediums that are electrically, magnetically, optically, or chemically altered to carry computer readable code for implementing software **90**. In other embodiments of mobile phone **50,** software **90** can be partially or fully implemented with digital circuitry, analog circuitry, or both. Mobile phone **50** can additionally include software (not shown) as would occur to those having ordinary skill in the art for browsing any Internet web site established by CT server **30**.

Referring to **FIG. 5**, software **80** includes a conventional registration module **81**, an advertising module **82**, a monitoring module **83**, and a conventional communication interface **84** for implementing a routine **110** as shown in **FIG. 6**. And, software **90** includes a conventional user interface **91**,

5   an advertising module **92**, and a telecommunication interface **93** for implementing a routine **120** as shown in **FIG. 6**. For purposes of understanding the principles of the present invention, a description of the interaction among software **80**, software **90**, registration database **40**, user profile database **41**, advertiser database **42**, base station **60** (**FIG. 1**), and

10   agent workstation **72** (**FIG. 1**) will now be described herein.

Referring to **FIGS. 1, 5,** and **6,** during a stage **S112** of routine **110**, module **81** of software **80** registers mobile phone **50** within database **40** in response to a reception of registration notification signal RNs by communication interface **84** from base station **60**. Registration notification

15   signal RNs indicates mobile phone **50** has been formally registered with base station **60** as would occur to those having ordinary skill in the art. The following TABLE 5 illustrates an exemplary row within registration database **40** with mobile phone **50** being registered with base station **60**:

20   TABLE 5

MOBILE STATION	BASE STATION(S)	REGISTRATION DAY AND DATE	REGISTRATION TIME
50	60	Weekday; Day, Month	xx:yy.zz

Those having ordinary skill in the art will appreciate that base station **60** is operational over a distinct service area, and a corresponding listing of base station **60** with mobile phone **50** within database **40** indicates mobile phone **50** is located within the service area of base station **60**. Mobile phone

5   **50** can be located within a service area of a different base station (not shown), and thus, any corresponding listing of a different base station with mobile phone **50** within database **40** indicates mobile phone **50** is located within the service area of that particular base station. Additionally, mobile phone **50** can be located within the service area of base station **60** while

10   being situated within a handoff zone between base station **60** and another base station. As such, any listing of base station **60** and a second base station with mobile phone **50** within database **40** indicates a potential handoff between base station **60** and the second base station. The information related to any potential handoff from base station **60** to the second base

15   station can be utilized when selecting advertisements to transmit to mobile phone **50** as will be further described herein in connection with **FIG. 7**.

During a stage **S122** of routine **120**, module **92** of software **90** controls a transmission of one or more searchable keywords KW to CT server **30**. In response thereto, module **82** of software **80** transmits advertisements

20   matching the keyword(s) KW to mobile phone **50** during a stage **S114** of routine **110**. In one embodiment, module **82** implements a routine **130** as shown in **FIG. 7** during stage **S114**.

Referring additionally to **FIG. 7**, module **82** filters advertisements within database **42** which contain the keyword(s) KW during a stage **S132** of routine **130**. In one embodiment, module **82** sorts through database **42** to compile a list of advertisement having one or more of the received keywords or

5   semantic equivalents thereof. The following TABLE 6 illustrates an exemplary row of an advertisement identifications and corresponding searchable keywords within advertiser database **42** with information related to the advertiser of call center **70**:

10   TABLE 6

ADVERTISER	FIRST ADVERTISEMENT	FIRST KEYWORD	SECOND KEYWORD	THIRD KEYWORD
70	70-0000001	Sports	Clothes	Shoes

During a stage **S134** of routine **130**, module **82** filters advertiser profiles from database **42** of the advertisers represented in the complied advertisements of stage **S132** that have a similar location as mobile phone

15   **50**. In one embodiment, module **82** determines the location of mobile phone **50** as being within the service area of base station **60** by reading the corresponding data row of database **40**. Module **82** then sorts through the data rows of database **42** to compile a listing of each represented advertiser within the service area of the base station **60** or the service area of any

20   potential handoff base station.

During an optional stage **S136** of routine **130**, module **82** filters the listed advertiser profiles compiled during stage **S134** that match the user profile of the user of mobile phone **50**. In one embodiment, module **82** sorts through the data rows of database **41** to compile a listing of each advertiser

5   offering a good or a service that matches the primary interest or secondary interest of the user of mobile phone **50** as listed in database **41**. Those having ordinary skill in the art will appreciate that this stage **S136** is to further refine the search of advertisements.

During a stage **S138** of routine **130**, module **82** directs a transmission

10   of filtered advertisements compiled during stage **S136** to mobile phone **50** with no charge to the account of the user of mobile phone **50**, such as, for example, an advertisement **AD** corresponding to advertisement identification 70-0000001 as shown in TABLE 6. The transmission of advertisement **AD** is from a storage location of call center **20** or call center **70**, and is in

15   accordance with the corresponding advertisement transmission schedule in database **41**. In one embodiment, module **82** utilizes the registration day, date and/or time as stored in database **40** in accordance with the keywords, profile and location of the user of mobile phone **50**.

Referring again to **FIGS. 1**, **5** and **6**, during a stage **S122** of routine

20   **120**, interface **91** of software **90** notifies the user of mobile phone **50** of the reception of advertisement **AD** by interface **93**. In one embodiment, call center **20** specifically designs and offers specials mobile phones, such as mobile phone **50**, to initially beep or vibrate to gain the attention of the user. The mobile phones can be equipped with a high quality color display for

25   displaying advertisements in text form or graphic form via a telephone or web site of call center **20**. Alternatively or concurrently, the mobile phones can be equipped with a high quality audio adapter, speaker or headphones for providing high quality audio presentations of advertisements.

Upon a reception of advertisement **AD**, the user of mobile phone **50** has the option of either proceeding to a stage **S124** of routine **120** or entering additional keyword(s) **KW** to refine the user's search for desired advertisements. Module **82** re-implements routine **130** (**FIG. 7**) when the user

5   of mobile phone **50** enters additional keywords.

During stage **S124**, module **92** of software **90** ascertains whether the user of mobile phone **50** desires to contact call center **70**, and/or store advertisement **AD**. In one embodiment, to input a contact command **CC** indicating a desire to have a communication link established between mobile

10   phone **50** and call center **70**, the user of mobile phone **50** can press the pound (#) key or a contact key combination as embedded in advertisement **AD**. To input a store command **SC** indicating a desire to store advertisement **AD**, the user of mobile phone **50** can press the key "7" having letter inscription "S" for storing, or a storage key combination as embedded in advertisement

15   **AD**. Advertisement **AD** can be stored within mobile phone **50**, database **41**, and/or transmitted to a personal e-mail account of the user of mobile phone **50**.

When the user of mobile phone **50** inputs contact command **CC**, module **92** of software **90** proceeds to a stage **S126** of routine **120** to control a

20   transmission of the contact command **CC** via interface **93** to interface **84**. When the user of mobile phone **50** inputs store command **SC**, module **92** proceeds to a stage **S128** of routine **120** to control a transmission of store command **SC** via interface **93** to interface **84**.

In response to a reception of contact command **CC** or store command

25   **SC**, module **83** of software **80** verifies the reception of advertisement **AD** by mobile phone **50** during a stage **S116** of routine **110**. In one embodiment, module **83** implements a routine **140** as shown in **FIG. 8** during stage **S116**.

Referring additionally to **FIG. 8**, module **83** proceeds to a stage **S144** of routine **50** when receiving contact command **CC** during a stage **S142** of routine **140**. During stage **S144**, module **83** controls an establishment of a communication link between mobile phone **50** and agent workstation **72** with

5   no charge to the account of the user of mobile phone **50**. In one embodiment, the advertiser of call center **70** can have access to the user profile within database **41** to facilitate a purchase of a good or a service.

Module **83** proceeds to an optional stage **S146** of routine **50** when receiving store command **SC** during stage **S142** of routine **140** or after an

10 execution of stage **S144**. During stage **S146**, module **83** can note a reception of advertisement **AD** by mobile phone **50**. In one embodiment, module **83** updates a status report for call center **70** that indicates the type of response by mobile phone **50** to advertisement **AD**.

Referring to **FIGS. 5** and **6**, while continually receiving registration

15 notification signal **RN**s, software **80** returns to stage **S114** to cycle through stage **S114** and stage **S116** in accordance with additional requests of the user of mobile phone **50**. Also, after transmitting the appropriate command, software **90** will return to stage **S122** to await any subsequent user inputs.

Referring to **FIGS. 1-8**, numerous advantages of the present invention

20 for the user of mobile phone **50** and the advertiser of call center **70** have been explicitly and implicitly described herein. In summary, for the user of mobile phone **50**, a first advantage is the ability to select an advertisement pull feature to have advertisements sent to mobile phone **50** and/or secondary mobile stations based upon user requests with no charge to the user account

25 of mobile phone **50**. A second advantage is a convenient mode of calling the advertiser of call center **70** to discuss or execute a potential purchase of a good or a service offered by the advertiser with no charge to the user account of mobile phone **50**. A third advantage is an identification of a near-by store

location of call center **70** whereby the user can conveniently visit the store location to purchase a good or a service from the advertiser.

For the advertiser of call center **70**, a first advantage is a passive and economic manner of advertising goods and services. A second advantage is

5   an immediate response mechanism for making sales of goods and services. A third advantage is a convenient execution of purchases with the ability to retrieve user information such as credit card and shipping address.

While the embodiments of the present invention disclosed herein are presently considered to be preferred, various changes and modifications can

10   be made without departing from the spirit and scope of the invention. The scope of the invention is indicated in the appended claims, and all changes that come within the meaning and range of equivalents are intended to be embraced therein.